

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

**Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for *Coryphantha Robbinsorum***

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** The Service determines threatened status for a plant, *Coryphantha robbinsorum* (Earle) A.D. Zimmerman (Cochise pincushion cactus). Populations of this plant are known to occur on State and private lands in Cochise County, Arizona. A population in adjacent Sonora, Mexico, is also reported. The U.S. populations are threatened with habitat destruction from grazing, exploration and potential drilling for oil, and over-collection. This proposal implements the protection provided by the Endangered Species Act of 1973, as amended.

**DATE:** The effective date of this rule is February 10, 1986.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours, at the Service's Regional Office of Endangered Species, 500 Gold Avenue, S.W., Room 4000, Albuquerque, New Mexico.

**FOR FURTHER INFORMATION CONTACT:** Peggy Olwell, Botanist, Region 2, Office of Endangered Species, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972).

**SUPPLEMENTARY INFORMATION:****Background**

*Coryphantha robbinsorum* was first collected by James A., James P., and John D. Robbins in 1975. The species was described by W.H. Earle (1976) as *Cochiseia robbinsorum*. Hunt (1978) placed the taxon in *Escobaria*. A.D. Zimmerman made the combination *Coryphantha robbinsorum* in 1978.

*Coryphantha robbinsorum* is a small, unbranched cactus. The tubercles are tightly packed in 8 and 13 spirals in mature plants (5 and 8 spirals in smaller plants). The areoles are circular to broadly oval and filled with copious white hairs. A deep furrow runs on the upper surface of the tubercle. The radial

spines number 11 to 17. Juvenile plants have 10 equal-length spines that are densely pubescent. Central spines are usually lacking. The bell-shaped flowers are pale yellow-green with a slight bronze cast. Anthers are yellow; the stigma lobes and style are green. Fruits are orange-red when ripe, but quickly turn dull red; seeds are black. Flowering occurs in March and April; fruit ripens in July and August (Zimmerman, 1978).

Historically, *C. robbinsorum* is known to occur in Cochise County, Arizona. There is also a reported population in adjacent Sonora, Mexico (Lopresti, 1984). The populations in Cochise County, Arizona average about one hectare (2.47 acres) each and are found on several isolated hills. Within an area of 10 to 16 square kilometers (4 to 6 square miles), there are roughly 40 hectares (100 acres) occupied by the plants. All of the known populations in Arizona are on a privately owned ranch and Arizona State lands. Plants are locally common over about half the range, and scattered to rare over the remainder. The population in Mexico has been reported by reliable sources, but has not been further studied.

*Coryphantha robbinsorum* occurs in the Semidesert Grassland (Brown and Lowe, 1980) on limestone hills at an elevation of 1,280 meters (4,198 feet). Dominant associated species are sandpaper bush (*Mortonia scabrella*), ocotillo (*Fouquieria splendens*), desert spoon (*Dasyliroton wheeleri*), snakeweed (*Gutierrezia microcephala*), Palmer agave (*Agave palmeri*), amole (*Agave schottii*), and prickly pear (*Opuntia phaeacantha*) (Phillips and Brian, 1982).

Federal action involving this species began when *C. robbinsorum* was included as a category 2 species in a list of plants under review for threatened and endangered classification in the December 15, 1980, **Federal Register** (45 FR 82480). Category 2 includes taxa for which the Service has insufficient biological information upon which to make a determination as to the appropriateness of proposing the species as endangered or threatened. A status report was completed in 1982, and *C. robbinsorum* was included as a category 1 species in the supplement to the 1980 notice, published in the November 28, 1983, **Federal Register** (48 FR 53648). Category 1 includes taxa for which the Service presently has sufficient biological information to support the appropriateness of their being proposed for listing as endangered or threatened.

The Endangered Species Act Amendments of 1982 required that all petitions pending as of October 13, 1982, be treated as having been newly submitted on that date. The species

covered by the December 15, 1980, notice of review were considered to be petitioned, and the deadline for a finding on those species, including *C. robbinsorum*, was October 13, 1983. On October 13, 1983, and again on October 12, 1984, the petition finding was made that listing *C. robbinsorum* was warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act. Such a finding requires a recycling of the petition, pursuant to section 4(b)(3)(C)(i) of the Act. A proposed rule published March 6, 1985 (50 FR 9083), constituted the next finding that the petitioned action was warranted in accordance with section 4(b)(3)(B)(ii) of the Act.

#### Summary of Comments and Recommendations

In the March 6, 1985, proposed rule (50 FR 9083) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice that invited general public comment was published in Douglas, Arizona in *The Daily Dispatch* on Monday, April 1, 1985. Five comments were received and are discussed below. No public hearing was requested or held.

The Washington, DC, Office of the Bureau of Land Management (BLM) raised no objection to the listing and commented that the species probably does not occur on BLM lands, and, therefore, that the listing would probably not affect that agency's activities. The Arizona State Office of the BLM commented that *C. robbinsorum* is a narrow endemic, and, as a recently described species, could be subject to heavy collection pressure. The latter office also stated that all of the habitat is on an active cattle ranch and that increased grazing could result in habitat degradation. The Service agrees and has included this information in the final rule.

John D. Robbins, the discoverer of *C. robbinsorum*, commented that the date of discovery was incorrect in the proposed rule. The service has incorporated the correct date in the final rule. He also strongly supported the listing of *C. robbinsorum* as threatened and indicated that collectors have urged him to provide locality data.

A local cactus expert commented that *C. robbinsorum* is highly restricted in its range and that a colleague had observed the plant in Sonora, Mexico. He also

stated that collection could be a severe problem due to the restricted habitat of the plant, and he supported listing. He suggested that cattle grazing would not cause substantive impacts to the habitat of *C. robbinsorum*, because grazing conditions are better in surrounding areas. He mentioned limestone quarrying as a potential threat to the species. He also discussed the taxonomy of the genus and suggested that the best generic name is *Escobaria*. The Service, however, has decided to use scientific names based on the most comprehensive scientific treatment of the cactus family for the United States: L. Benson, *The Cacti of the United States and Canada*, Stanford University Press, 1982. This choice was made to facilitate communication among those concerned with the conservation of cacti; it does not preclude other scientific opinions. The cactus expert also reported that propagation of the plant has been successful and that seeds and plants should be widely available in the trade in the near future.

The Arizona Commission of Agriculture and Horticulture (ACAH) informed the Service that *C. robbinsorum* is protected under the Arizona Native Plant Law (ANPL) and that collecting permits for this species are not being issued at this time because of low population numbers. The Service agrees that permits should not be issued for this species and commends the ACAH on this action. This new information has been incorporated into the final rule. The ACAH also suggested that fencing of the habitat, in agreement with the State and private landowners, would protect the plants from grazing and vehicle traffic. In addition, the ACAH stated its opinion that collectors will collect this rare species regardless of the legal protection. The Service is aware that there are some people who will break laws; however, the laws still have value and merit because there are other people who will abide by them, thus protecting this and other threatened and endangered species. The Service trusts that ACAH will make a reasonable effort to use its authority under ANPL to protect this species on State and private lands.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *C. robbinsorum* should be classified as a threatened species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations promulgated to

implement the listing provisions of the Act (codified at 50 CFR Part 424) were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act. These factors and their application to *Coryphantha robbinsorum* (Earle) A.D. Zimmerman (Cochise pincushion cactus) are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** Threats to the survival of *C. robbinsorum* include habitat destruction due to livestock grazing leading to trail formation, soil disturbance, erosion channels, and direct destruction of plants by trampling. One population studied by Phillips and Brian (1982) was immediately adjacent to a livestock water source; livestock trails leading to the tank and service roads were evident in topographically less rugged parts of the habitat. All of the known range in Arizona is on an active cattle ranch, including private land and State land leased for grazing. While overgrazing is not a serious problem, and the owners of the ranch are conservation-oriented and sympathetic to preservation of the cactus (Zimmerman, pers. comm., February 27, 1984), a change in grazing practices or ranch ownership could lead to rapid deterioration of present conditions.

A source of potentially serious concern is exploration for oil in the area. At least one deep well was drilled around 1976, and the access road passed through a *C. robbinsorum* population. Although no oil was found, additional exploration continues. The present ranch owners do not own the mineral rights to the area (Zimmerman, pers. comm., February 27, 1984).

**B. Overutilization for commercial, recreational, scientific, or educational purposes.** *Coryphantha robbinsorum* is very desirable cactus for private and commercial collectors because of its small size, beauty, and recent recognition. Steven Brack, Belen, New Mexico (pers. comm., January 19, 1984), noted its vulnerability to any stress, and stated that collection is the main threat to the species. He further stated that confidentiality of the location is the key factor in its protection. Zimmerman (pers. comm., February 27, 1984) noted that more than half of the total population is on less than 4 percent of the total habitat, some 40 hectares (100 acres). Because individuals of this species are so concentrated, they are potentially very vulnerable to commercial cactus exploitation. Density

of plants on the remaining 96 percent of the potential habitat is very low. Theoretically, collectors could reduce the plants to 5 to 10 percent of their present numbers if the proper habitat were thoroughly searched. Once reduced to widely scattered individuals in marginal habitat, the species might be unable to recover and would be vulnerable to extinction from natural events.

**C. Disease or predation.** No evidence of damage or death of plants from insects, pathogens, rodents, or other animals has been noted. Cattle do not intentionally graze these plants, but inadvertent trampling and habitat damage by range cattle may be a threat (Phillips and Brian, 1982).

**D. The inadequacy of existing regulatory mechanisms.** The Arizona Native Plant Law (A.R.S. Chap. 7, Art. 1, Sec. 3-901 C.I.) includes all members of the cactus family on its list of protected plants. These may be collected only with a State permit and permission of the landowner. *Coryphantha robbinsorum* is not included in the more restrictive prohibited list, which allows collection only for scientific or educational purposes under permit (Sec. 3-901 B). However, permits are not being issued by the State at this time for *C. robbinsorum* because of low population numbers (Robert Countryman, Arizona Commission of Agriculture and Horticulture, pers. comm., 1985). The Arizona Native Plant Law provides no protection against habitat loss or incidental taking or destruction, which are the major risks to the species.

**E. Other natural or manmade factors affecting its continued existence.** *Coryphantha robbinsorum* has a much lower reproductive potential than most other cacti (Zimmerman, pers. comm., February 27, 1984), with an estimated average production of 3 fruits, with 20 seeds each, per plant per year (Brack, 1984). According to Zimmerman, absence of these cacti from nearly half the isolated patches of apparently suitable habitat may be the result of natural local extinctions. A delicate balance between local extinction and recolonization in small "islands" of suitable habitat may be a natural feature of the biology of the species.

If such a balance exists, any reserve intended to provide for the survival of this species would have to encompass several adjacent patches of suitable habitat to allow for local extinctions and recolonization.

Range fires and competition with dense grasses could become threats should grazing be eliminated entirely

(Zimmerman, pers. comm., February 27, 1984). The low estimated population and restriction to a specific habitat type within a very restricted geographic range would intensify the effects of any adverse impacts of the species or its habitat (Phillips and Brian, 1982).

The Service has carefully assessed the best scientific information available regarding the past, present, and future threats faced by this species in determining to make the rule final. Based on this evaluation, the preferred action is to list *C. robbinsorum* as threatened without critical habitat. Threatened status is appropriate because the population, while extremely limited in distribution and facing serious potential threats, has a sufficient number of plants to maintain itself if not heavily affected by collection. The threats are mitigated by the remote, unpublicized location and the concern of the present landowners for preservation of the cactus. The reasons for not designating critical habitat are discussed below.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *C. robbinsorum* at this time, because its restricted distribution, accessibility, and attractiveness to cactus collectors make it vulnerable to threats from collection. The cactus may be sought as a curiosity by collectors of rare cacti, if critical habitat descriptions and maps are published in the **Federal Register**. Such publication would call attention to this species, make specimens easy to locate, and increase vulnerability to taking.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and taking

prohibitions are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402, and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. There are no known Federal actions that may affect *C. robbinsorum*, which occurs only on private and State lands.

The Act and its implementing regulations found at 50 CFR 17.71 and 17.72 set forth a series of general trade prohibitions and exceptions that apply to all threatened plant species. With respect to *C. robbinsorum*, all trade prohibitions of section 9(a)(2) of the Act implemented by 50 CFR 17.71, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. Seeds from cultivated specimens of threatened plant species are exempt from these prohibitions provided that a statement of "cultivated origin" appears on their containers. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR Section 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving threatened species under certain circumstances. It is anticipated that few permits would ever be issued since the species is not common in cultivation or in the wild.

Section 9(a)(2)(B) of the Act, as amended in 1982, prohibits the removal and reduction to possession of endangered plant species from areas under Federal jurisdiction. Section 4(d) allows for the provision of such protection to threatened species through regulations. This protection will apply to *C. robbinsorum* when revised regulations are promulgated. Permits for exceptions to this prohibition are available under regulations to be codified at 50 CFR 17.62 (50 FR 39681, September 30, 1985). At present, no populations of *C. robbinsorum* are known to exist on Federal lands. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

On July 1, 1975, *Coryphantha robbinsorum* was listed on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The effect of this listing is that a permit is required from the country of origin for export. Commercial trade is allowed but only after the country of export has determined that it will not harm the wild populations. International movement of this species is minimal. The Service will review this species to determine whether it should be listed on Appendix I of CITES.

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### Literature Cited

- Brown, D.E., and C.H. Lowe. 1980. Map, Biotic Communities of the Southwest (scale 1:1,000,000). Rocky Mtn. Forest and Range Expt. Sta., Gen. Tech. Report RM-78. U.S.D.A Forest Service.
- Earle, W.H. 1976. *Cochisea* Earle, genus novum. Saguaro Bulletin 30:65-66.

- Hunt, D.R. 1978. Amplification of the genus *Escobaria*. Cactus and Succulent Journal of Great Britain 40:13.
- Lopresti, V. 1984. *Coryphantha robbinsorum* in Mexico. Cactus and Succulent Journal of Mexico 29:81.
- Phillips, B.G., and N.J. Brian. 1982. Status report on *Coryphantha robbinsorum*. U.S. Fish and Wildlife Service, Office of Endangered Species, Albuquerque, N.M.
- Zimmerman, A.D. 1978. The relationships of *Cochisea robbinsorum* Earle. Cactus and Succulent Journal (U.S.) 50:293-297.

#### Authors

The authors of this final rule are Heather A. Stout and Peggy Olwell, Office of Endangered Species, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972). The preliminary listing package was provided by Dr. Arthur Phillips, III, and Dr. Barbara G. Phillips, Museum of Northern Arizona, Flagstaff, Arizona. Status information was provided by Dr. Barbara G. Phillips and Ms. Nancy Brian, Museum of Northern Arizona, Route 4, Box 720, Flagstaff, Arizona 86001 (602/774-5211).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened Wildlife, Fish, Marine mammals, Plants (agriculture).

#### Regulation Promulgation

#### PART 17—[AMENDED]

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, is amended as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. Amend § 17.12 (h) by adding the following, in alphabetical order, under the family Cactaceae, to the List of Endangered and Threatened Plants:

#### § 17.12 Endangered and threatened plants.

\* \* \* \* \*

(h) \* \* \*

| Species   |                           | Historic range               | Status | When listed | Critical habitat | Special rules |
|---|---------------------------|------------------------------|--------|-------------|------------------|---------------|
| Scientific name   | Common name               |                              |        |             |                  |               |
| Cactaceae—Cactus family:  |                           |                              |        |             |                  |               |
| <i>Coryphantha robbinsorum</i> (= <i>Cochisea</i> r., <i>Escobaria</i> r.). | Cochise pincushion cactus | U.S.A. (AZ), Mexico (Sonora) | T      | 214         | NA               | NA            |

Dated: December 26, 1985.

P. Daniel Smith,

Assistant Secretary for Fish and Wildlife and  
Parks.

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